PRECIPITATION IN OREGON.

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With the possible exception of Washington, no State in the Union has so wide a variation in precipitation as Oregon, and probably nowhere in the United States is there so great a variation in the precipitation of nearby stations having approximately the same altitude.

Figure 1 shows the normal annual geographical distribution of precipitation over the State. This chart is based on all available actual records up to and including 1920. The records are for varying periods, and probably do not represent a true normal in any instance. Longer records and a much larger number of them are necessary for the preparation of a chart showing the true normal precipitation, which, however, is approximately as shown.

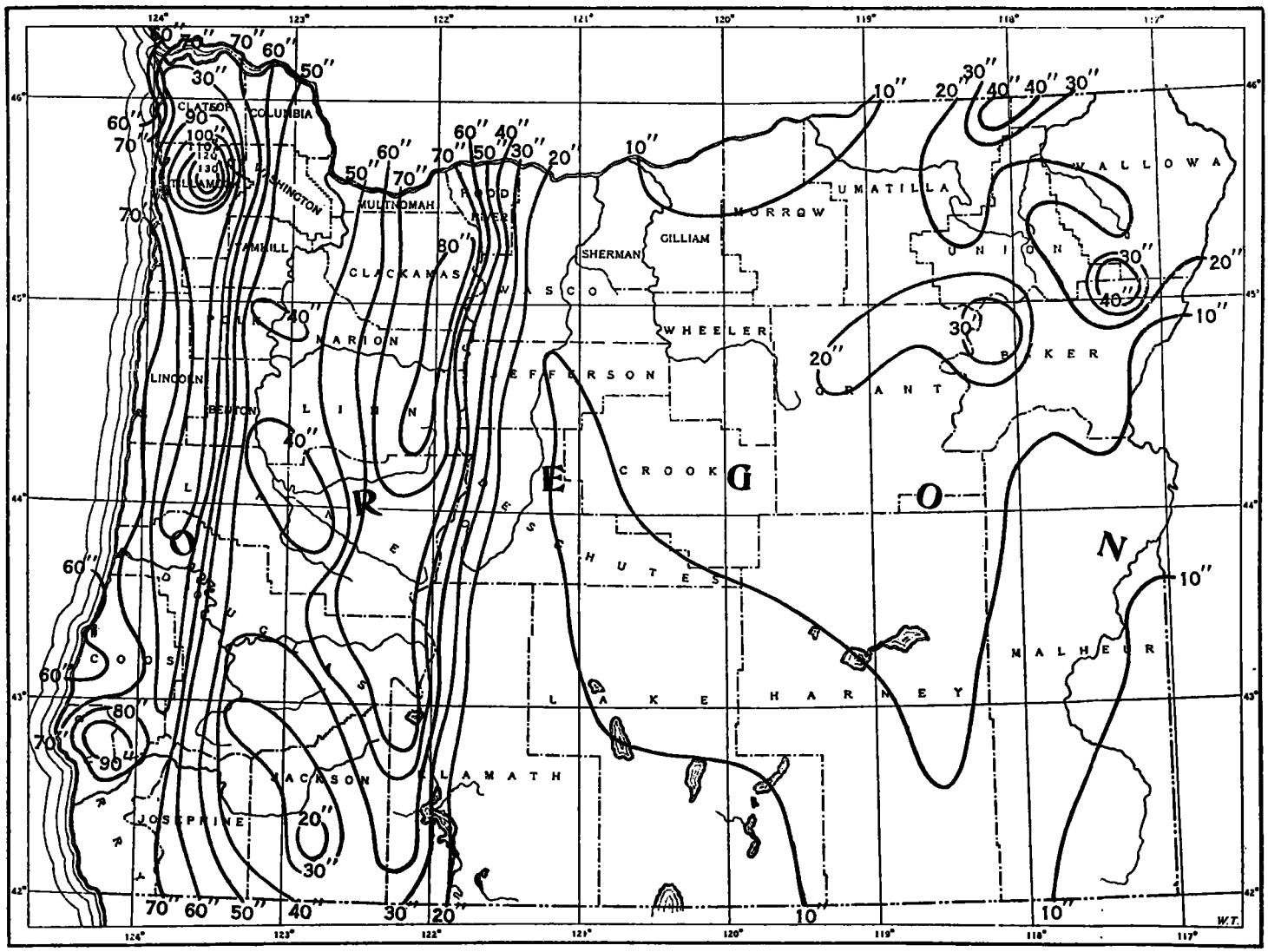

FIG. 1.—Normal annual geographical distribution of precipitation in Oregon.

The range is from 8 inches at Umatilla, on the Columbia River, in Umatilla County, to 132 inches at Glenora, on the west slope of the Coast Range, in Tillamook County. Mr. E. C. La Rue, of the United States Geological Survey, prepared a rainfall chart of western Oregon several years ago, on which a small area near Glenora was credited with more than 200 inches, and a part of the west slope of Mount Hood was credited with more than 140 inches annually, but these amounts were estimated, from stream flow, and by comparison with records at nearby stations.

The three principal factors in the distribution of rainfall, viz, altitude, distance from the sea, and exposure to rain-bearing winds, are all plainly evident in Oregon, but are so complex in their action as to present some apparent anomalies, and to make it very difficult to estimate the rainfall of any locality from records made in another locality.

In a general way, the rainfall increases rapidly with altitude on the west slope of the Coast Range, decreases from the summit of the Coast Range to the valleys of the Willamette, Umpqua, and Rogue Rivers, increases with altitude on the west slope of the Cascades, decreases abruptly on the east slope of the Cascades, and is fairly uniform over the high eastern plateau and very unevenly distributed in the Blue Mountains and adjacent territory. This is roughly shown in Figure 2, in which precipitation and altitude are compared along an east and west line

extending from Nehalem, in Tillamook County, to Richland, in Baker County. This line shows a relation between elevation and precipitation that, while not constant, is still unmistakable. It shows also the effect of nearness to the ocean and of exposure to the moist southwesterly winds.

leaves the Columbia River. In this figure the line begins at North Head, Wash., which is more nearly typical of the exposed coast stations than is Fort Stevens or Astoria. Cascade Locks has 75 per cent more precipitation than Portland, although it is at about the same altitude, only a few feet above sea level and is 43 miles far-

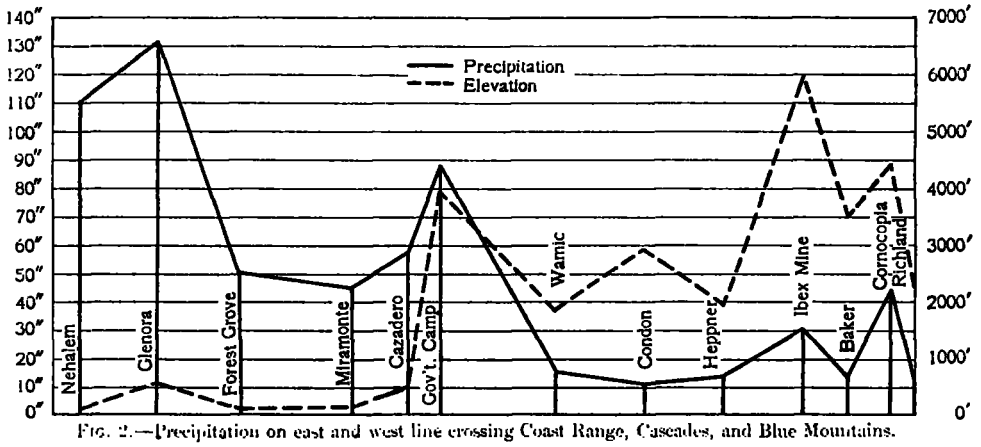

FIG. 2.—Precipitation on east and west line crossing Coast Range, Cascades, and Blue Mountains.

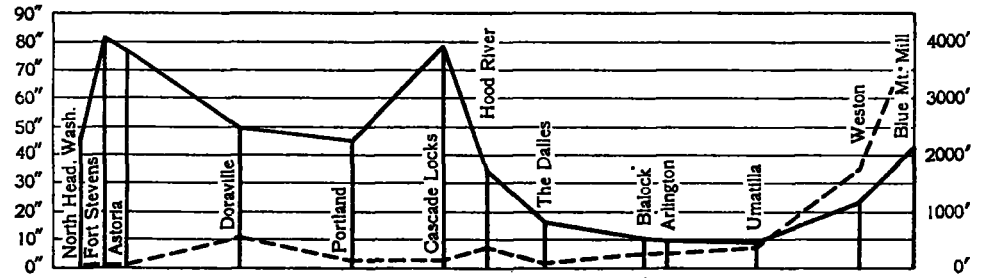

FIG. 3.—Precipitation along northern boundary.

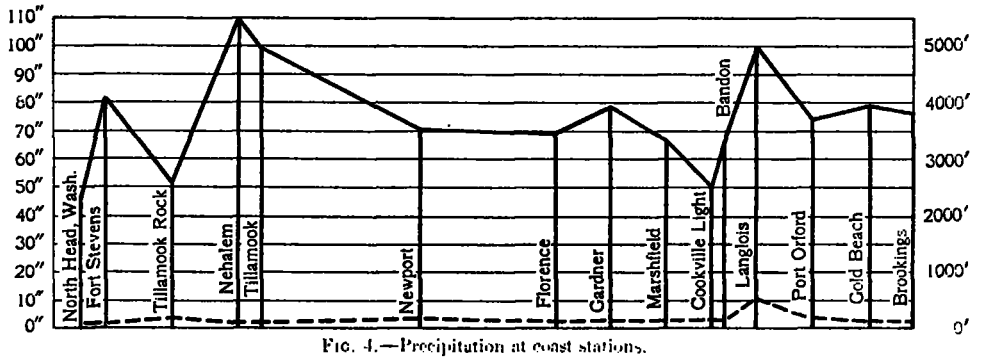

FIG. 4.—Precipitation at coast stations.

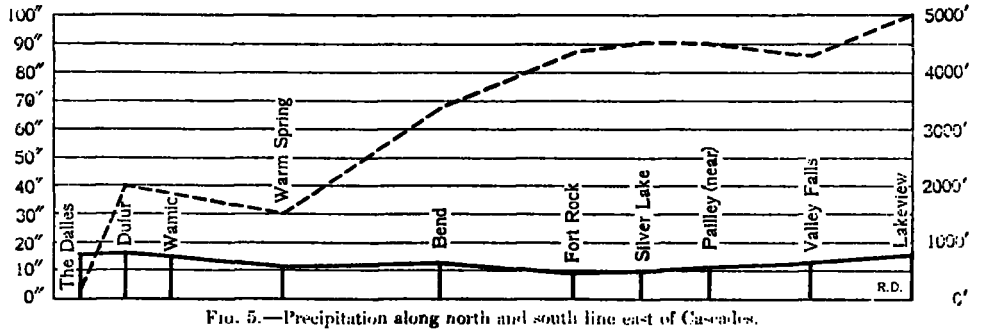

FIG. 5.—Precipitation along north and south line east of Cascades.

FIGS. 2-5.—Topographic and rainfall profiles in various parts of Oregon.

However, Figure 3, which shows the distribution along the northern boundary, which, for most of the distance, is the Columbia River, presents much the same type of precipitation distribution, without material difference in altitude except east of Umatilla, where the boundary

ther from the ocean. It is, however, in the Columbia River Gorge, with mountains on either side, and the heavy precipitation is due to the influence of these mountains, but this does not explain why Cascade Locks has more precipitation than Welches, which is nearby but at an

elevation of 1,435 feet. Hood River, 20 miles east of Cascade Locks, has less than half as much rainfall as Cascade Locks; The Dalles, 21 miles beyond Hood River, has about half as much as Hood River; and at Blalock, 54 miles farther inland, the precipitation is but little more than half that at The Dalles. The character of vegetation between Cascade Locks and Blalock shows very clearly the marked difference in rainfall.

An interesting feature is the wide range in precipitation along the coast, as shown in Figure 4. It is commonly stated that the rainfall along the Pacific coast of the United States increases from south to north. This statement is not borne out by the figure, for the Curry County coast has more rainfall than occurs at Bandon are very freely exposed, while Marshfield is sheltered.

Figure 5 shows the distribution along a line drawn roughly from north to south east of the Cascade Mountains, extending from The Dalles to Lakeview. Here, while the altitude ranges from near sea level to 5,000 feet, the extreme range in precipitation is less than 8 inches. The Dalles at the lowest point has the most precipitation, and Fremont, with an elevation of 4,300 feet, has the least. The sheltering effect of the Cascade Mountains, and the increased distance from the normal track of low pressure areas, offset the effect of increased altitude.

Over most of the State the precipitation is greatest in November, December, or January and least in July.

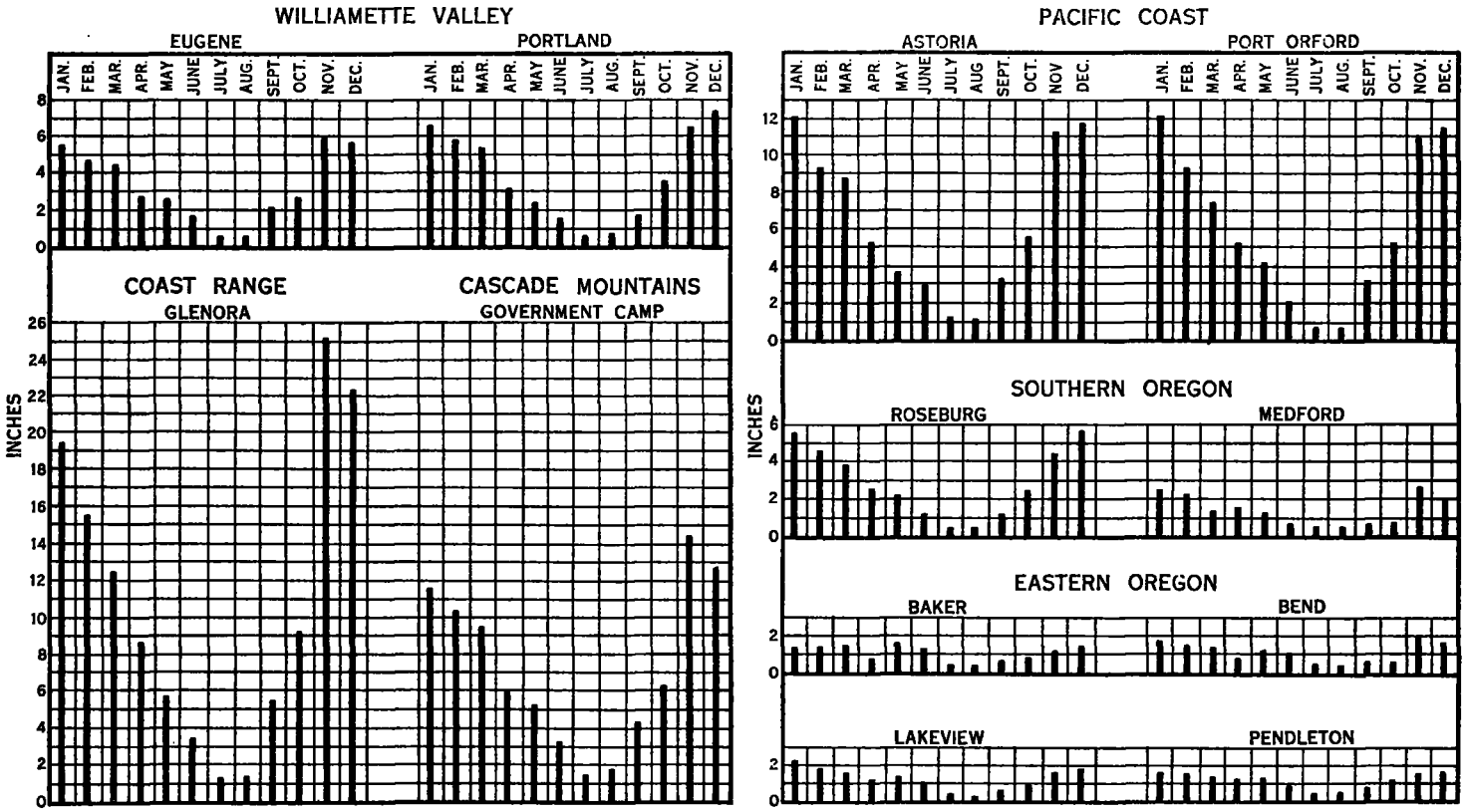

FIG. 6.—Mean monthly precipitation in various parts of Oregon.

the mouth of the Columbia River. Not enough data are available to furnish a satisfactory explanation of the variations shown, the most notable of which are between Fort Stevens and North Head, between Tillamook Rock and Nehalem, and between Coquille River Light and Langlois. The lack of uniformity in periods covered, and the difference in the exposure of the rain gauges may account for some of the ranges, but it is believed that all the gauges have been well exposed, and the records cover periods long enough to mask most of the fluctuations occurring from year to year. The stations most freely exposed to the sea, namely North Head, Tillamook Rock, and Coquille River Light, have the least rainfall, while Nehalem and Langlois, which are back a short distance from the beach line, have very heavy rainfall. However, Port Orford, Gold Beach, and

(See fig. 6.) In the eastern counties there is a secondary maximum in May, and in a few interior localities this becomes the principal maximum. Figure 6 shows the distribution by months. The range between summer and winter precipitation is much greater in the western portion than in the eastern portion, but even in midsummer there is somewhat more precipitation in the western counties than in the eastern. West of the Cascades 44 per cent of the precipitation occurs in winter, 23 per cent in spring, 6 per cent in summer, and 27 per cent in fall. East of the Cascades 38 per cent occurs in winter, 25 per cent in spring, 10 per cent in summer, and 27 per cent in fall. In the former area the winter precipitation is more than seven times the summer precipitation, while in the latter the winter precipitation is less than four times the summer precipitation.

The numerical values on which Figure 6 is based are given in Table 1.

TABLE 1.—*Normal monthly precipitation, inches (selected stations).*

Stations.	Jan.	Feb.	Mar.	Apr.	May.	June	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Annual.
Coast.													
Astoria	12.10	9.47	8.84	5.30	3.71	3.00	1.31	1.25	3.46	5.75	11.03	11.98	77.20
Port Orford	12.41	9.45	7.67	5.41	4.18	2.27	0.62	0.47	3.50	5.47	11.01	11.81	74.27
Coast Range.													
Glenora	19.59	15.80	12.56	8.96	5.92	3.60	1.29	1.34	5.75	9.30	25.15	22.33	131.99
Willamette Valley.													
Eugene	5.40	4.68	4.29	2.68	2.54	1.56	0.45	0.50	2.03	2.65	5.95	5.76	38.49
Portland	6.50	5.73	5.18	3.05	2.36	1.78	0.54	0.65	1.84	3.69	6.47	7.34	45.13
Southern Oregon.													
Roseburg	5.70	4.56	3.90	2.48	2.05	1.07	0.32	0.33	1.04	2.61	4.37	5.92	34.35
Medford	2.49	2.14	1.35	1.50	1.27	0.84	0.46	0.14	0.69	0.84	2.73	1.95	16.40
Cascade Mountains.													
Government Camp	11.79	10.46	9.60	6.02	5.24	3.39	1.65	1.92	4.40	6.38	14.43	12.85	88.13
Eastern Oregon.													
Baker	1.34	1.34	1.44	0.94	1.73	1.21	0.43	0.39	0.76	0.91	1.18	1.53	13.20
Bend	1.83	1.49	1.22	0.80	1.17	1.05	0.53	0.33	0.67	0.56	1.98	1.68	13.31
Lakeview	2.22	1.97	1.60	1.09	1.37	1.04	0.39	0.28	0.70	0.85	1.78	1.87	15.16
Pendleton	1.70	1.55	1.45	1.13	1.40	0.96	0.48	0.49	0.87	1.12	1.64	1.53	14.30

Figure 7 shows the sequence of annual precipitation from year to year in the eastern division, the western division, and the State as a whole. The curves are drawn for the average precipitation as published in the Oregon annual summary. The first impression given by this figure is that of a fairly regular periodicity, with a period of about three years. In no instance is there a continuous increase or decrease lasting more than two years. This supports a theory advanced several years ago by Mr. George N. Salisbury, of the Seattle Weather Bureau office. (MONTHLY WEATHER REVIEW, 1903, 31: 229.) It is probable, however, that little practical use can be made of this periodicity for forecasting purposes, because the maxima or minima may be anywhere from two to four years apart.

Three and five year averages have been computed in order to eliminate the effect of years of abnormally great or small on the average for the State. It was found that during a large part of the period covered the 3-year averages make nearly as smooth a curve as the 5-year averages.

In Figure 7 is shown what appears to be a progressive decrease in precipitation. It is believed, however, that the decrease is apparent rather than real, and that the drop in the lines is due, for the most part, to the increasing number of stations in the drier areas of the State.

In 1890, the year for which state-wide data were first assembled, there were 29 stations having complete records. The number increased from year to year till

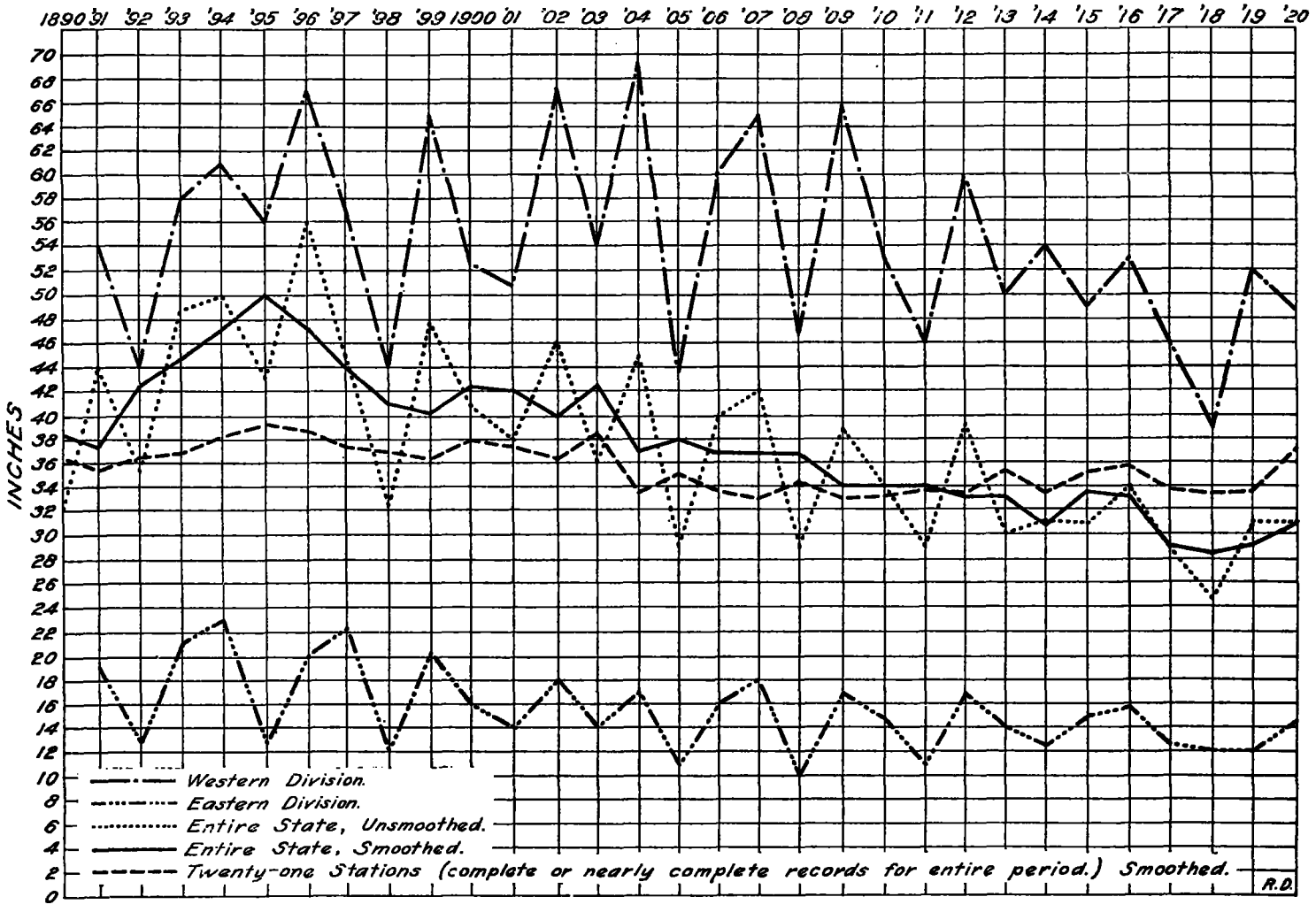

FIG. 7.—Thirty years' record of precipitation in Oregon.

1913, when there were 125 stations having complete records. By 1921 the number had fallen to 100. As the most rapid agricultural development in this period has been in the semiarid portions of the State, under irrigation and improved dry farming methods, it is natural that the greater number of new stations established should be in the drier regions.

In Figure 7 a smoothed curve of the annual precipitation, as published from year to year in the annual summary, is compared with a similar curve representing the annual precipitation at 21 stations having nearly or quite complete records for the 32-year period, 1890 to 1921, inclusive. The latter curve shows a slight downward tendency in the second decade, which is partially overcome later, and which, in a longer period, would doubtless be entirely overcome.

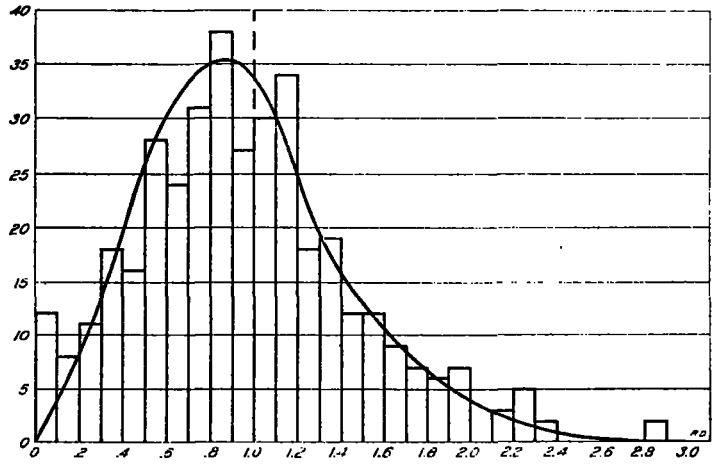

FIG. 8.—Frequency distribution of precipitation for the part of Oregon west of the Cascades for the 32-year period.

Figure 8 shows the frequency distribution for the western division, west of the Cascades, for the 32-year period. This curve is drawn in the manner suggested by the Chief of the Weather Bureau on page 121 of the MONTHLY WEATHER REVIEW for March, 1921. From this curve the following values are deduced:

1. The modal or most frequent monthly amount is 90 per cent of the normal.

2. The probability that the precipitation will be close to the modal amount, say between 0.875 and 0.925, is

$$\frac{35.5}{766.9}=0.04\frac{6}{10},\text{ or 1 month in 22.}$$

3. The median amount is also 90 per cent of the normal.

4. The probability of the monthly precipitation being close to the normal, say between 0.975 and 1.025, is

$$\frac{34.2}{766.9}=0.04\frac{1}{2},\text{ or 1 month in 22.}$$

5. The probability of rainfall greater than the normal is

$$\frac{766.9-453.2}{766.9}=0.41.$$

6. The most probable amount greater than the normal is 130 per cent.

7. The most probable amount less than the normal is 67 per cent.

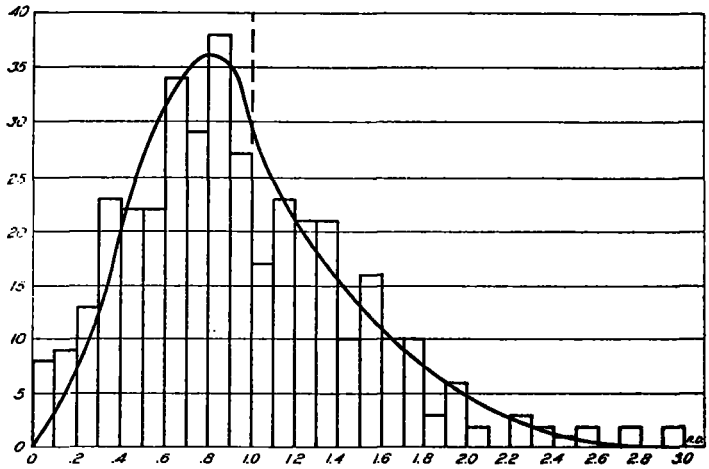

FIG. 9.—Frequency distribution of precipitation for the part of Oregon east of the Cascades for the 32-year period.

Figure 9 shows the frequency distribution for that portion of the State east of the Cascades. Although the normal precipitation for this division is less than one-third that for the western division, and the range between summer and winter precipitation is only about one-fourth as great, the frequency curves for the two divisions are very similar. The values shown by this curve are as follows:

1. Modal amount, 80 per cent of normal.

2. Probability of precipitation close to modal amount,

$$\frac{36.1}{760.8}=0.04\frac{3}{4},\text{ or about 1 month in 21.}$$

3. Median amount, 88 per cent of normal.

4. Probability of precipitation close to normal

$$\frac{28.8}{760.8}=0.03\frac{4}{5},\text{ or about 1 month in 30.}$$

5. Probability of rainfall greater than normal,

$$\frac{760.8-457.2}{760.8}=0.40.$$

6. Most probable amount greater than normal, 135 per cent.

7. Most probable amount less than normal, 66 per cent.

Table I gives the annual precipitation for most of the stations in the State having records for any considerable portion of the 32-year period under consideration.

TABLE I.—*Annual precipitation, Oregon (inches).*

Station.	County.	Elevation.	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	1909	1910	1911	1912	1913	1914	1915	1916	1917	1918	1919	1920	1921
Albany	Linn	212	40.02	53.39	37.93	46.07	49.86	47.48	57.15	50.19	36.22	46.99	38.88	38.89	52.94	33.65	49.41	30.19	40.72	44.44	28.54	43.70	38.30	34.11	46.68	35.37	44.24	40.12	47.74	39.50	34.31	52.85	38.59	44.59
Alpine	Benton	400									36.67	55.61	44.24	49.05	66.37	43.59	63.15		48.08	56.92	34.20	55.11												
Arlington	Gilliam	400			8.01	11.48	12.65	7.78	11.75	8.40	5.33	10.11	9.89	12.96	11.16	8.46	9.38	9.08																
Ashland	Jackson	1,963	20.26	23.74	15.36	24.22	22.28	13.99	24.25	17.72	15.57	19.54	21.09	18.21	22.60	21.25	25.11	11.99	24.25	28.87	14.58	27.61	17.82	18.78	26.26	21.90	20.11	18.46	17.47	19.06	21.15	20.24	19.20	20.56
Astoria	Clatsop	16	58.49	77.74	70.01	91.68	88.84	70.75	94.82	85.06	68.72	101.40	84.97	77.87	86.48	74.86	88.67	72.62	82.73	73.91	56.71	70.10	86.85	59.17	85.89	71.27	76.10	79.23	92.50				80.90	93.69
Baker	Baker	3,471	12.50	18.23	11.95	15.83	17.83	12.00	13.37	14.68	8.52	15.11	13.84	10.64	12.80	10.57	12.34	12.25	13.56	10.90	8.61	13.55		9.89	13.77	14.18	10.89	13.79	11.91	10.29	7.71	7.84	9.96	13.29
Bandon	Coos	55	58.78	78.11	66.52	93.58	103.97	100.63	62.83	51.05	50.27	70.74										13.50	11.37	8.35	12.96	13.99	10.83	12.56	13.39	9.44	12.06	11.23	10.71	13.07
Bear Creek	Crook	4,800																					15.20	11.32	18.80	17.74	12.66	19.26	22.20	12.74	10.71	13.42	19.35	16.76
Bear Valley	Grant	5,000																					18.81	15.55	26.64	21.14	19.35	21.65	25.00	19.40	12.09	15.72	20.35	16.43
Beech Creek	Grant	5,000																																
Bend	Deschutes	3,629													10.90	13.37	17.10		10.42	25.75					16.62	12.39	8.12	11.75		8.80	10.27	11.07	11.27	12.99
Black Butte	Lane	1,200												48.30	62.77	46.27	60.09	37.60				58.77	39.44	36.75	65.25	51.20	52.05							
Brookings	Curry	130																								78.56	89.06	77.89	81.66	74.34	49.69	74.90	75.77	75.48
Buckhorn Farm	Josephine	1,300										73.41	56.40	63.41	90.12	69.49	96.74	43.23	70.79	80.40	53.29	95.62												
Burns	Harney	4,170															15.66	10.44	18.12	15.57	8.01	14.08	12.32	6.18	13.64	13.82	9.65			8.00	11.16	10.66		37.96
Butte Falls	Jackson	2,550																					37.97	27.73	39.87	29.69	30.70	27.28	31.86					89.73
Cascade Locks	Hood River	100	70.96	87.24	63.49	96.63	94.22	71.03	94.97	88.67	76.28	97.95	76.73	76.97	93.35	72.24	76.26	58.66	77.98	79.69	65.15	75.13	85.81	60.10	87.79	72.51	73.73	78.32	78.10	85.79	67.73	83.94	84.32	89.73
Cascadia	Linn	1,050																				70.35	57.40	54.51	72.55	62.27	55.00	63.07	73.01	67.16		77.12	72.02	73.00
Cazadero	Clackamas	503																				66.11	54.41	49.09	59.33	52.33	50.15	57.48	61.04	63.91	46.97	63.77		65.98
Chiloquin	Klamath	4,200																						13.56	27.98	18.33	15.67	16.06	18.65	17.16	16.29	14.19	16.43	15.33
Condon	Gilliam	2,884																			9.11	13.21	10.19	8.22	15.42	13.14	8.39	13.41	15.72	13.38	9.40	12.74	14.30	17.59
Coquille River Light	Coos	12									41.10	67.80	47.90	54.11	76.74	54.78	69.55	44.16	55.38	69.97	36.22	71.17	48.51	45.95	55.38	48.45	63.98	49.80	59.62	42.88	40.41	60.39	50.36	
Cornucopia	Baker	4,490																					44.16	29.94	48.45	47.02	39.27		44.10	49.67	38.54	43.31	55.93	53.47
Corvallis	Benton	266	54.82	44.99	31.88	43.04	46.44	43.74	57.76	43.61	35.02	49.69	38.49	41.36	54.02	34.13	56.21	34.39	45.71	50.23	33.29	50.31		38.46	46.81	35.76	44.13	36.82	46.05	39.13	33.52	50.57	37.12	41.05
Crescent	Klamath	4,452																	20.29	29.47	12.54			15.43	23.79	18.89	18.24	21.31	20.90	16.05	18.42				
Dayville	Grant	2,200						8.39	14.88	13.74	9.16	15.45	14.39	10.22	14.01	10.62	14.79	11.49	13.02	12.24	7.83	9.90	8.61	7.48	15.67	12.67	12.35	13.70	12.58	11.39	7.82	11.05	10.82	11.14
Deadwood	Lane	350											80.23	91.30	106.49	75.26	105.72	60.87	89.79			105.08	89.25	75.13	100.24	81.45	102.12			98.79	79.70	111.38	95.64	
Detroit	Marion	1,452						69.97															74.49	62.73	92.95	72.79	70.13	75.70	81.30	73.74	43.55	73.62	57.78	73.06
Diamond	Harney	4,300		19.31	11.10	13.07	16.66	9.75		15.41	10.19	16.22												6.65	8.56	11.04	6.81							
Doraville	Columbia	600													67.59	50.12	59.16	38.60	52.58	48.19	48.96	56.45	53.15	39.36	59.46	44.23	46.52	49.51	52.92	51.06	43.82	47.61	47.25	58.67
Drain	Douglas	300														42.61	31.89	32.51	45.40	57.37	30.93	53.35	39.61	36.28	56.73	39.67	46.17	46.92	52.70	40.30	39.67	57.48	46.80	40.01
Dufur	Wasco	2,000																					14.24	11.06	19.22	14.33	13.08	18.30	18.53	12.72	13.37	17.42	11.16	17.48
Echo	Umatilla	625															9.01	7.58	10.61	10.54	6.22	9.59	7.83	6.86	13.09	11.70	7.44	12.47	15.52	9.58	7.83	10.76	12.38	11.36
Ella	Morrow	820										9.74	8.97	9.77	11.56	7.88	8.37	8.82	12.81	8.35	5.24	8.70	6.72	5.54	11.56	12.13								
Eugene	Lane	449		44.76	29.25	42.02		37.03	48.47	40.55	27.16	41.28	40.89	40.01	51.50	34.21	50.71	29.95	37.55	46.27	27.22	39.16	37.20	30.21	43.58	31.66	35.22	39.85	48.18	41.17	31.40	46.27	36.67	36.60
Falls City	Polk	555								89.17	60.57	91.33	77.26	81.74	103.39	69.80	102.48	62.11	82.56	84.84			68.67	49.71										
Florence	Lane	75																					65.07	54.06	76.11	66.87	81.68	74.29	71.59		57.61	74.05	66.49	71.34
Fremont	Lake	4,300																					9.46	7.71	9.79	9.81		8.22	11.43	4.45		7.23	7.18	11.04
Gardiner	Douglas	30	63.26	87.83	75.64	83.21	79.56	81.86	95.12	78.19	66.60	96.38	71.72	82.40	100.44	72.67	103.56	58.88	79.26	83.80	58.35	89.44	70.23	60.31	77.96	68.68	85.54							
Glendale	Douglas	1,441																26.66	52.45	49.13	37.66	38.79	27.55	21.89	39.53	29.91	43.45	38.00	46.97					
Glenora	Tillamook	575			104.37	151.38	139.98	116.82	167.29	156.53	107.97	162.48	132.49	115.68	147.48	129.15	144.87	97.33	140.01	125.43	115.95	149.26	131.78	98.53	144.58	105.95	127.78							
Government Camp	Clackamas	3,890							124.35	103.80	87.93	124.35	80.92	68.58	83.30	73.86	79.50	65.41	72.02	69.32	75.56	93.50	83.98	77.53	98.05				94.72	93.13		91.93	85.95	101.36
Grants Pass	Josephine	956	57.25	33.58	23.95	32.95	36.57	27.58	39.56	29.04	17.77	39.04	29.50	50.22	39.25	36.19	43.76	20.36	35.22	39.20	25.45	43.83	27.89	21.50	33.60	28.73	31.37	26.38	31.44	25.50	23.61	30.83	24.20	22.14
Grass Valley	Sherman	2,281														10.10		8.71	12.00	13.43	6.38	11.77	10.81		16.74	14.64	9.64							
Gumboot	Wallowa	4,500																					22.32	22.73	28.83	29.94	30.10	31.00	33.13	26.33	22.10	20.95	27.72	28.50
Headworks	Clackamas	719											80.87	75.87	90.04	68.46	75.95	61.10	78.92	81.36	64.03	81.54	74.00	66.07	81.79	72.52	70.30	83.48	89.11	81.71	64.03	90.72	78.95	91.95
Heppner	Morrow	1,950	12.39	16.29	18.20	18.29	15.36				11.42	12.98			15.17				15.07	14.29	11.81	8.73	10.65	18.72	15.20	10.76	15.85	17.40	14.62	15.22	12.94	16.64	12.72
Hermiston	Umatilla	451																		10.20	4.79	9.12	6.78	5.00	9.24	8.23	6.22	8.41	13.56	7.89	6.53	9.25	10.51	9.82
Hilgard	Union	2,997																					17.90	18.36	27.25	24.75	12.48	16.07	24.47	29.99	24.92	22.20	31.64	27.14
Hood River	Hood River	350	30.95	36.61	33.24	54.17	48.29	41.48	51.36	46.87	31.07	44.18	31.08	36.88	42.00	30.22	35.23	25.02	35.71	33.43	25.65	28.41	21.47	18.61	32.18	22.48	24.76	30.21	38.34	32.25	25.44	35.20	32.42	37.94
Howardville	Wallowa	3,600																					32.28	20.81	34.68	34.34	26.60	29.15	29.33	33.18	25.92	23.76	24.77	32.49
Ibex Mine	Grant	6,000																					26.48	25.51	34.76	35.21	27.27	28.66	33.57	32.24	24.10	32.38	30.29	29.80
Jacksonville	Jackson	1,640	27.72	27.92	16.78	28.40	29.92	20.73	28.78	22.86	17.84	33.63	26.43	30.37	32.64	32.77	41.70	17.06	29.09	35.26	19.05	39.45	23.83	16.58	28.79	25.13	21.76	18.61	22.98	22.68	19.62	21.76	23.60	23.38
Joseph	Wallowa	4,400	18.88	26.68	18.56	20.48	17.40	16.08	17.12	15.21	17.14	17.63	16.42	11.74	15.88	17.08	21.04	16.12	22.98	20.67	16.28	21.75	21.55	19.42	22.46	23.23	24.57		22.90	28.66			20.14	27.18
Kingman	Malheur	2,217																					8.19	9.25	13.42	9.41	7.02	6.81	8.53	8.10	8.04	7.26	8.12	8.35
Klamath Falls	Klamath	4,100													11.26		15.04	8.32	14.87	16.67	10.02	17.67	14.70	9.73	19.56	16.11	11.42	11.72	10.98	10.22	9.51	9.40	12.22	11.94
La Grande	Union	2,784	16.54	21.54		27.04	21.12	12.09			16.41	25.16	19.45	18.56	19.99	17.46	20.29	18.02	22.08	21.31	15.11	17.24	21.06	15.52	28.41	25.28	12.76	18.61	15.60	20.70	16.58	19.18	24.06	23.95
Lakeview	Lake	4,950		24.55	19.57			14.62	20.31	16.02	8.19			15.10	16.75	16.11	21.47	9.92	19.71	27.16						13.33	10.82	12.12	11.60	10.04	7.59	10.27	13.99	9.94
Langlois	Curry	500			84.71	102.05	109.95	101.80	118.01	94.41	81.79	108.17		94.52																				
Lilyglen	Jackson	4,537																					29.47	30.27	37.38	38.39	30.27	30.86	33.18	29.13	28.34	33.48		
McKenzie Bridge	Lane	1,400														64.53	82.22	53.12	67.33	86.11	58.45	77.02	65.77	64.52	85.02									
McKinley	Coos	140									56.47	82.73	59.35	61.97	87.09	59.67	91.52	49.82	68.03	82.89	48.27	89.46	59.42	56.27			69.84		74.90	57.02	50.94	73.14	69.35	61.17
McMinnville	Yamhill	154	42.35	51.46	34.57	49.93	53.40	49.62	64.92	55.07	38.93	56.68	47.40	51.75	61.97	40.32	53.35	35.30	41.49	47.60	36.38	47.76	41.76	35.59	49.92	37.11	43.15	42.42	50.36	42.57	31.48	47.15	40.25	43.23
Marshfield	Coos	40													77.86	58.21	82.84	49.18	65.60	78.73	47.47	78.95	57.50	56.16	70.61	58.98	75.91	68.97	75.82	50.96	51.41	72.36	68.41	67.33
Maury	Crook	4,000																					18.59	11.43	19.83	17.03	14.87	17.50	16.50	10.64	8.91	7.64		
Medford	Jackson	1,425																							24.84	19.94	14.65	13.80	14.52	16.91	14.69	15.14	16.33	16.21
Merrill	Klamath	4,070																							16.53	6.30	12.06	10.01	14.86	14.86	11.02	7.65		11.79	6.86		13.32	9.71
Miramonte Farm	Clackamas	162				51.17	55.64	44.04	54.19	45.50	36.21	49.09	43.15	42.52	50.07	36.75	43.52	32.83	39.92	43.05	32.14	45.20	40.89	38.50	48.57	42.54	41.82	42.69	51.23	43.29	34.81	48.29	48.92	
Moro	Sherman	1,836																					10.39	9.20	13.33	12.17	11.32	14.89	14.46	11.33	10.63	12.09		12.63
Mount Angel	Marion	485	37.39	53.32	35.20	47.28	47.26	47.45	55.26	49.85	42.23	48.67	46.76	43.14	52.79	35.37	49.56	37.86	50.80	59.39	45.41	54.17	45.34	41.13	51.16	44.31	47.64	46.95	57.36	50.53	40.53	57.77	51.52	54.17

Nehalem	Tillamook	10						105.07	132.73	122.81	100.73	134.36	116.48	103.02	125.08	114.38	109.76	82.48	114.37	98.88														
Newport	Lincoln	128				62.99	71.11	74.59	91.86	69.28	63.73	90.19	75.61	69.99	86.22	60.09	74.53	52.16	70.43	63.82	58.49	74.47	55.73	43.83	73.78	73.31	76.60	69.80	79.60	72.38	60.55	77.67	75.14	85.02
Ochoco	Crook	3,200																					18.65	13.03	21.61	15.27	14.86	17.60	19.55	14.41	15.92	19.89	15.47	
Paisley (near)	Lake	4,400																		15.60	7.98	10.80	6.57	9.88		10.63	12.97	15.24	16.45	13.36	6.70			
Parkdale	Hood River	1,450																					39.58	23.44	35.75	28.67	27.44	31.84	46.86	39.60	31.92	40.57	36.86	
Pendleton	Umatilla	1,070	10.74	14.78	12.43		16.38	10.47	14.99	18.48	11.23	20.08	18.22	14.64	14.90	11.08	14.92	13.71	15.81	13.86	8.07	13.86	14.06	8.20	19.54	17.52	10.77	15.19	16.92	13.65	11.01	13.93	17.28	17.69
Pilot Rock	Umatilla	1,817																				11.12	12.23	10.90	22.81	17.51	10.85	15.08			11.51	14.30	15.48	13.32
Portland	Multnomah	153	40.38	47.41	33.58	39.03	39.32	30.76	44.13	43.01	33.90	42.21	38.22	41.05	50.15	35.62	46.37	34.10	43.29	42.89	34.37	43.75	38.65	33.28	43.47	36.30	36.67	41.30	45.77	40.50	31.50	45.70	41.17	43.21
Port Orford	Curry	100																	85.15	104.71	67.65	118.64		56.41		74.24	86.90	55.30				66.28	69.55	81.44
Prairie City	Grant	3,425																							22.56	16.53	13.78	15.30	16.16	13.95	11.33	14.09	16.13	15.75
Prineville	Crook	2,864								11.64	7.87	8.18	7.74	7.82	8.76		10.64	7.92	9.35	13.31	6.73	10.76		7.10			7.46	8.65	9.28	7.23	7.41	9.08		
Prospect	Jackson	2,800																	38.59		36.24	58.29	42.32	36.47	50.98	37.36	35.99	35.34	40.80	37.01		42.13	42.58	45.13
Ramsey	Wasco	1,350														12.82	19.01	14.55	15.64	22.06	8.98	15.57	14.61	12.67	20.37	13.53	14.29	17.26	16.76	12.58				
Richland	Baker	2,213													19.11	18.70	19.31	10.63	13.21	8.18	7.34	10.29	11.04	7.68	10.42			10.28	9.13	10.71	9.07	9.85	11.17	
Riddle	Douglas	715											25.50	31.06	36.61												28.91	26.53	30.57		23.01	36.92	27.48	25.17
Riverside	Malheur	3,000									4.55	12.34	8.58	7.35	8.54		8.33	8.27	15.46	12.99	6.82	10.76	11.18	8.55	13.63	18.30	8.89	9.45	12.31			9.15	7.77	9.40
Roseburg	Douglas	510	34.65	46.90	28.88	37.86	44.29	29.92	43.69	34.83	25.93	42.97	29.74	34.37	39.58	29.50	43.42	21.14	30.18	42.12	24.18	39.07	28.97	24.58	37.97	26.53	27.07	29.70	33.45	28.02	24.85	38.45	28.65	25.63
Salem	Marion	130				49.08	48.62	47.13	54.93	46.53	34.19	48.12	37.22	37.42	42.55	24.56	42.08	28.49	34.01	37.10	26.76	39.59	31.89	27.55	35.72	31.75	35.87	32.55	44.76	32.82	27.92	41.01	40.78	43.12
Siskiyou	Jackson	4,125													35.55							47.73	29.24	29.07	39.90	36.97	36.40	43.37	43.33	31.52	31.73	42.79	40.71	37.35
Sparta	Baker	4,150			18.06	23.59		20.61	30.49	29.47	23.41	33.77	23.04	20.69	23.57	22.36	23.51	15.36	17.34	15.20	14.13	20.93	23.34	20.89	25.75	21.66	14.80	28.72	17.58	19.06	16.09	17.99	19.92	13.88
Stafford	Clackamas	400								58.78	41.47	58.72	52.12	53.78	58.17	45.91	54.82	38.43	54.31	49.03	42.60	53.81	49.49	44.22	52.77	45.37	45.22			46.04				
Starkey	Union	3,680																					13.45	14.68	24.44	23.19	13.56	16.82	17.69	17.06	13.32	16.08	19.72	21.62
The Dalles	Wasco	96	12.28	12.12	11.97	17.97	18.02	13.88	16.76	16.60	7.58	16.74	13.62	15.83	17.43	12.77	15.94	11.79	14.84	20.06	8.18	16.05	14.56	8.99	16.72	14.16	11.36	15.87	15.54	12.54	11.99	15.19	12.88	21.70
Tillamook	Tillamook	31								130.90	120.90	127.99	111.74	107.42	132.13	111.71	115.96	78.66	108.61	83.11	76.74	84.65	83.93	63.59			95.82		104.10	95.87				
Toledo	Lincoln	75			61.61	87.56		66.55	98.07	89.73	67.84	76.60	59.67	64.23	89.36	65.04	95.59	60.53	83.60	77.22	76.80	81.38	64.70	50.32	74.88	80.74	85.95	79.02			72.25	78.88		
Umatilla	Umatilla	340						6.80	8.49	10.43	4.58	10.36	7.97	7.57	8.70	5.88	7.74	6.67	7.76	10.33	5.92	7.46	8.24	6.98	8.88	9.50	7.29	8.24	11.58	6.68	5.72	7.81	9.59	8.46
Vale	Malheur	2,242			8.31	9.18	9.15	7.48	12.52	12.33	6.79	10.72	9.21	9.22	9.60	9.45	15.19	10.42	10.07	11.09	8.03	9.39	9.09	8.47	12.29	12.31	6.46		5.97					
Valley Falls	Lake	4,250																						12.18	13.86	13.71	10.63	14.68	13.12	10.01	7.49	8.84	13.09	12.03
Wallace Orchard	Polk	170																					37.79	35.65	43.97	36.47	42.30	39.29	51.93	40.52	28.03	48.18	39.26	40.57
Wallowa	Wallowa	2,935															18.33	14.52	19.13	17.62	12.74	18.91	18.75	13.09	20.17	23.88	14.15	17.31		21.23	16.77	12.59	16.99	20.69
Warmspring	Jefferson	1,500														8.63	16.26	9.92	9.39	16.18	7.13	12.76	11.32	6.87		10.00	7.74			8.06	9.35		6.81	11.36
Wasco	Sherman	1,263																			7.02	13.86	11.84	10.13	14.81	12.20	10.43	14.87	14.10	11.84	11.14	13.66	12.77	14.23
Welches	Clackamas	1,435																					80.00	64.32	92.12	80.73	73.48		70.98	91.58	60.27	81.09		92.13
Weston	Umatilla	1,800						15.25	25.76	25.91	19.23	33.75	29.96	22.41	28.52	22.73	28.34	25.83	29.59	26.37	14.46	22.19	18.90	18.05	26.74	23.87	15.43	23.49	27.98	21.01	16.24	19.72	24.13	23.10
Williams	Josephine	1,385						28.69	39.56	29.35	18.00	37.00	30.38	31.42	38.81	38.50	44.45	19.79	35.76	41.90	31.70	57.57	27.93	19.34	33.43	29.10	31.75	27.38						
Yonna	Klamath	4,146																			7.92	19.11	15.47	10.77	18.46	14.59	14.04		11.11	10.05	8.23	8.14	13.51	11.16